

The young state of this species and for a considerable period of growth scarcely presents any trace of the sinuated margin.

This shell, which cannot be separated from *Ter. maxillata*, Sow., has lately been found of large dimensions; we have specimens attaining more than two inches in length and the same in breadth; thus it would appear that under favourable conditions this species attained a much larger size than that figured by Mr. Sowerby before it exhibited the strongly sinuous front.

In reference to this shell Mr. Walton states, that it is the same as *Ter. maxillata*, and this assurance is founded on that experience which is attained by the examination of thousands of specimens. This *Terebratula* varies much in size and form, its greatest diameter being sometimes in the longitudinal and sometimes in the transverse direction of the shell. Some varieties are deeply plicated, others have no plicæ at all; it is found quite small at Hampton Cliff and very large at Pickwick, and is distributed plentifully through the forest marble, Bradford clay and great oolite around Bath; it is also abundant near Sapperton and Hailey Wood.

XXIV.—Descriptions of new species of Butterflies.

By WILLIAM C. HEWITSON.

[With two Plates.]

Family NYMPHALIDÆ.

Genus HETEROCHROA, Boisduval.

THE genus *Heterochroa* of Boisduval is remarkable amongst butterflies for the close affinity which its species bear to one another, and yet also for the great beauty and variety of design which it presents and with colours so simple and so few.

The twelve species which I have figured, most of them new and all hitherto undescribed, are but half of the genus. They are all inhabitants of the New World.

Some of them, *H. Nea*, *Melona*, *Erotia* and *Lerna*, are much more robust than the rest. *H. Fessonia* and *Cestus*, besides the unbroken and conspicuous band of white, have other characters peculiar to themselves. The cell is shorter and the disco-cellular meets the median nervure somewhat nearer to the body.

The outlines on the plates show portions of the underside of the wings characteristic of each species.

Heterochroa Nea. Pl. XX. fig. 1.

Wings dark brown with a central band common to both, commencing at the third median nervule of the upper wing, and extending to the anal angle of the lower, on the upper wing broad

and fulvous, on the lower white. On the upper wing between the commencement of the band and the anterior margin and at nearly right angles with it is a large oblong fulvous spot separated from it only by a black nervule, but so deeply sinuated on each side at its junction as to touch it only at the apex; parallel to the posterior margin is a double line of light brown, the inner line wanting on the space between the second and third median nervules; on the lower wing are three similar lines, and between the end of the inner one and the anal angle a small triangular fulvous spot sinuated on its lower margin.

On the upper wing between the central band and the body, and at right angles with the anterior margin, are six black lines, five within the cell, the first and second on each side of the discocellular and nearly straight, *the third so much arched as to form a triangle with the second*, the three inner ones curved and equidistant and prolonged beyond the cell.

Underside very light; the central band, the discoidal spot, and the submarginal lines are all cream-coloured; the inner line on the lower wing is beautifully iridescent. On the upper wing between the cell and the discoidal spot is a small irregular spot of a clear bluish white: with the exception of the upper part of the space between the fourth and fifth black line which is red, the space within the cell is pure white; the lines are deep black; there are also spots of white below the cell. On the lower wing the inner margin of the white band is dark brown, and parallel to it and between it and the humeral angle are two rufous bands, the space between the first and the white band rufous, the rest cream-colour. Expansion 2 inches 8 lines.

In the British Museum, from Para.

Heterochroa Melona. Pl. XX. fig. 2.

Wings dark brown with a central band reaching from the anterior margin of the upper wing to the anal angle of the lower, intersected by black nervules on the upper and anterior portion of the lower wings; on the upper wing fulvous, broadest between the discoidal nervules; the inner margin deeply sinuated at the third median nervule; on the lower wing white. On the upper wing are two very indistinct marginal lines of light brown; on the lower wing four, one close to the margin, three equidistant between it and the white band; the red spot at the anal angle is small with a central round spot of deep black. On the upper wing across the disc are five indistinct black lines, four within the cell straight and nearly parallel, the fifth and inside one oblique. Underside vinous brown, the central band on both wings white; the widest portion of it on the disc of the upper wing clouded with brown; at the tip are four or five small white spots,

and at the anal angle of the lower wing three narrow lunules of white; half-way between the central band and the body is a band of yellowish white common to both wings; on the disc of the upper wing between the disco-cellular and the white band are three small spots of blue, and within the cell a *triangular V-like spot* of lilac; the humeral angle of the upper wing is light yellow, that of the lower wing reddish brown. Expansion 2 inches 6 lines.

In the British Museum, from Colombia.

Heterochroa Erotia. Pl. XX. fig. 3.

Wings dark brown with a central band common to both, commencing at the anterior margin of the upper wing and extending to the anal angle of the lower; on the upper wing fulvous except towards the interior margin, where it becomes gradually white; on the lower wing white; the first three segments of the band on the disc of the upper wing short, the fourth twice as long, the fifth between the second and third median nervures short and cordate, the remainder broad. On the upper wing half-way between the margin of the central band and the tip of the wing are three small fulvous spots. Parallel to the margins of both wings are undulating lines of light brown as in the last species, and at the anal angle two narrow lunular lines of white, and above them two lunules of deep black, and between them a small triangular fulvous spot. The black lines across the cell as in the last species. The arrangement of the underside is the same as the upper side of the next species. The broad central band which is all white commences only at the second median nervule; that portion of it which crosses the disc is divided into five distinct yellowish spots, the lowest cordate, the rest oblong, three of them connected by black lines with the three spots near the tip of the wing, which are also yellowish; the light linear bands of both wings are broken and form chains of white spots; within the cell of the upper wing are three cross-lines of deep black, the space between the outer two is *oblong* and pure white, that between the second and third rufous, that within it white, divided longitudinally by a black line; on the lower wing between the white band and the body are two bands of white, the first short. Expansion 2 inches 7 lines.

In the British Museum, from Bolivia.

Heterochroa Lerna. Pl. XX. fig. 4.

Very nearly allied to the last-described species (*H. Erotia*), of which it may possibly be only a remarkable variety. The central band, which is entirely white, commences only at the second median nervule in a semicircular form broadly separated from the fulvous discoidal portion of the band. The three fulvous spots

near the tip of the wing are smaller. In all other respects it is the same. The undersides of both species are alike. Expansion 2 inches 7 lines.

In the British Museum, from Bolivia.

Heterochroa Donyia. Pl. XX. fig. 5.

Wings deep purple-brown, with a narrow central band of white common to both, intersected by black nervules: commencing at the third median nervule of the upper wing and extending to the anal angle of the lower, its first segment small and indefinite, it gradually tends, though very slightly, towards the anal angle of the wing, and thus forms a very obtuse angle with its continuation on the lower. Between its commencement and the tip of the wing is a large, broad, oblong fulvous spot, curved in the direction of the posterior margin of the wing, extending from the extreme anterior margin, where it is broadest, to the second median nervule, where it is only separated by a wide line of brown from the first segment of the white band. On the upper wing are two submarginal lines of light brown and a portion of a third, on the lower wing three; at the anal angle of the lower wing is a rather large fulvous patch and two small deep black spots; across the cell are the usual black lines.

Underside rufous; the white band is continuous from the anterior margin of the upper wing, indistinct at first and deeply sinuated before it reaches the median nervule; the fulvous spot is lighter, especially at its edges; the marginal lines are white, and between two of them at the anal angle of the upper wing is a round black spot; the disco-cellular of the upper wing is marked by a rufous band, within which is one of lilac, then white, then again rufous. Expansion 2 inches 7 lines.

From Mexico. In the British Museum and my own collection.

Heterochroa Fessonia. Pl. XX. fig. 6.

Wings brown with a central band of white, of nearly equal breadth, common to both, extending from the anterior margin of the upper wing to the anal angle of the lower, slightly arched outwards on the upper wing; half-way between it and the tip of the upper wing is a large irregular fulvous spot, rounded outwards, sinuated on its inner margin; below it, parallel to the margin of both wings, are three indistinct bands of light brown of unequal breadth; at the anal angle are two small deep black spots, and between them an irregular fulvous patch. Across the cell of the upper wing are fine indistinct lines of black, some of which are prolonged beyond; across the cell of the lower wing are also four similar black lines. Underside, the outline only of the fulvous spot is indicated by indistinct lines of white; parallel to

the margin of both wings are also several whitish lunules ; within the central band, crossing the cells of both wings, is a rufous band edged with black and surrounded with white ; between it and the central band on the lower wing across the cell is a second short band of the same colour. Expansion 2 inches 8 lines.

In the British Museum, from Honduras.

Heterochroa Cestus. Pl. XXI. fig. 7.

Wings light brown with a broad central band of white common to both and extending from the anterior margin of the upper wing to the anal angle of the lower and of nearly equal breadth, curved slightly outwards on the upper wing, rounded at the anal angle of the lower. Between the white band and the tip of the upper wing is an oblong irregular fulvous spot trifold by black nervures, the two lower portions the largest and cordate, surrounded by dark brown, which is continued in three equidistant zigzag lines parallel to the posterior margin till they reach the anal angle of the lower wing, where the middle one terminates in two lunular spots, between which is a T-shaped fulvous mark ; the space between the two outermost of these zigzag lines is of the lightest brown, especially on the lower wing, where it is almost white. On the upper wing between the white band and the body are the usual black lines, two of which cross the cell and are prolonged beyond ; the space within them is tinged with red ; on the lower wing four similar lines in pairs cross the cell.

Underneath much lighter ; instead of the trifold fulvous spot are five white spots, two of which are red in the middle, two brown ; the lightest zigzag marginal line is quite white, and between it and the margin is another broken white line ; across the cells of both wings, as in the last species, is a continuous rufous band edged with black and broadly margined with white. Expansion 2 inches 2 lines.

In the British Museum and my own collection, from Venezuela.

Heterochroa Alala. Pl. XXI. fig. 8.

Wings dark brown with a central narrow band of white intersected by black nervules ; common to both, commencing at the third median nervule of the upper wing by a nearly round distinct spot, and extending to the anal angle of the lower, where bending slightly inwards it terminates in a point. On the upper wing between the commencement of the white band and the subcostal nervure are *two small oval white spots*, and between them and the tip of the wing an oblong fulvous band divided by black nervules into five distinct parts, the anterior small and hastate, the next three larger and cordate, the *fifth small and lunular* followed by two lunules of light brown sometimes tinged with red. Parallel

to the posterior margin of both wings are two narrow lines of light brown and between them and the white band on the lower wing a third zigzag line of the same colour; at the anal angle are two round deep black spots of unequal size, the larger crowned with bright fulvous, the smaller surrounded by it; the cells of both wings are crossed by the usual black lines.

The underside is chiefly of a light reddish brown; the fulvous spots of the upper wing are nearly white; between them and the tip are several small spots of white; the space between the black lines which inclose the disco-cellular nervule of the upper wing is red-brown, that between the second pair of lines is white; on the lower wing a zigzag line of reddish brown runs along the outer margin of the white band. Expansion 2 inches 1 line.

In the British Museum and my own collection, from Venezuela.

Heterochroa Corcyra. Pl. XXI. fig. 9.

Wings dark brown with a narrow central band of white intersected by black nervules; common to both, commencing at the third median nervule of the upper wing by a *cordate* spot and extending to near the anal angle of the lower wing, where it terminates in a fine point scarcely connected with a small triangular spot of the same colour, joined upwards from its commencement to the subcostal nervule by an *indistinct* trifid whitish spot deeply *sinuated on its inner margin* where it touches the median nervule; between it and the tip of the wing is a slightly curved band of fine fulvous spots, the first and exterior one smallest and hastate, the next three cordate, the *fifth large and oblong*; outside of this and parallel to the posterior margin of both wings are two lines of light brown, and between them and the central band on the lower wing are six fulvous lunules, and at the anal angle a large spot of the same colour, and two small deep black spots. On the cells of both wings are the usual black lines. The underside is of various shades of red-brown and pink; the inner edge of the white band is clearly defined by a dark margin of red-brown which connects with it in one band the indistinct spots above the median nervule, marking clearly the bend on the inner margin, by which it is easily known from the next species; the fulvous band of the upper wing is but slightly indicated by light reddish brown. Expansion 2 inches 2 lines.

In the British Museum, from New Grenada.

Heterochroa Collina. Pl. XXI. fig. 10.

Closely allied to the last-described species (*H. Corcyra*), from which it differs in that the white band is widest in the middle, from which it tapers to a point at each end, commencing at the median nervule of the upper wing by an *oblong narrow* spot; that

the trifold spot between it and the subcostal nervure is whiter and more distinct; that the portion of it which touches the median nervure, which in the last species is deeply sinuated and crescent-shaped, is here round and entire; that the fulvous band near the tip of the upper wing is composed of *six* divisions, the two lower of which are large, forming together a triangle which is only separated from the first two segments of the white band by a black line; and that the fulvous lunular spots of the under wing are wanting. Expansion 2 inches 4 lines.

In the British Museum and my own collection, from Quito.

Heterochroa Aricia. Pl. XXI. fig. 11.

Also closely allied to *H. Corcyra*, but differs from it in that the white band commences on the upper wing by an *oval* spot, does not meet equally at its edges in passing from one wing to the other, and is curved inwards on the lower wing, where it terminates at the anal angle in the form of a hook; that in the place of the fulvous spots of the upper wing is a broad red band of equal breadth, which crosses the whole wing parallel to the posterior margin and the white band, from which it is only separated by a line of brown; that the fulvous lunular spots of the lower wing are wanting, and that the underside is much lighter. Expansion 2 inches 2 lines.

In the British Museum and my own collection, from Bolivia.

Heterochroa Arecosa. Pl. XXI. fig. 12.

Upper wings long and slightly sinuated, under wings deeply dentated with a short tail, light brown with a central band of white common to both, commencing at the subcostal nervure of the upper wing—between which and the margin is a small oblong white spot—and extending to the anal angle of the lower; broken at its commencement into four distinct spots, the first oval and distant from the rest, the second rounded and nearer, the third and fourth oblong and touching, the rest distinctly intersected by black nervules, the last segment at the anal angle triangular and divided from the rest. Parallel to the margin of the upper wing are two waved lines of dark brown, and also the five black lines across the cell; the space between the middle line which is very straight, and the next within it which is curved, is red as well as the humeral angle. Parallel to the margin of the lower wing is a waved dark brown line, and within it six large nearly round spots of the same colour; at the anal angle is a large irregular rufous patch, and in its centre two indistinct dark spots.

Underside light and indistinct; the central band crosses the entire wing unbroken; the marginal lines are white; a rufous band crosses the cell of the upper wing, and another marks the posi-

tion of the disco-cellular, each bordered by white; at the anal angle of the lower wing are three round black spots, one large. Expansion 2 inches 7 lines.

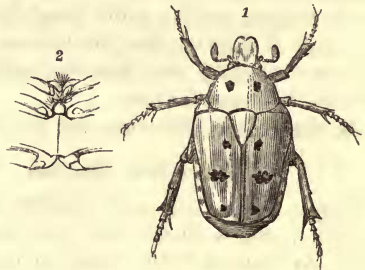
In my own collection, from Mexico and the West Indies.

XXV.—*Remarks on some Cetoniadæ, with the description of a new Australian species.* By ADAM WHITE, F.L.S., M.E.S. Stettin, and Assistant in the Zoological Department British Museum.

SCHIZORHINA, Kirby.

S. (DIAPHONIA) BASSII, White.

Yellow; with a black spot inclosing the eye, two roundish black spots on the middle of the *thorax* placed transversely. *Elytra* of a deeper and somewhat brownish yellow, with a sericeous tinge; three black spots on each elytron, one near the scutellum, a larger transverse one beyond the middle and nearer the side than the suture, and one small subapical one: *antennæ* and legs yellow; *pygidium* yellow, with extremely short, scattered, bristly hairs, the surface "quasi squamiformiter acudacta;" the metathorax and greater part of the abdomen beneath shining black; edges of the segments smooth, the bases punctured; two largish yellow spots placed on the middle of the abdomen; four yellow triangular spots on the edge of the segments on each side.



Hab. Australia. British Museum: from the collection of the Entomological Club.

The figure by Mr. William Wing gives its correct size and form; in general form this species approaches the *S. atropunctata*, Kirby, Linn. Trans. vol. xii. p. 464 (found first by Robert Brown, F.R.S., on Mimosas near Port Jackson), more than any other *Cetonia*; and I must confess that until Dr. Schaum attracted my notice to it, it was placed with that species in the collection of the British Museum, being regarded as a variety of the female: it certainly seems to be in some sort the connecting link between *Diaphonia*, Newman, and *Schizorhina*, Kirby, as restricted by Dr. Burmeister.

The head, as in the subgenus *Diaphonia*, very slightly cleft in front; the sides nearly parallel, upper surface flat, rather coarsely